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He also referred to the lack of adequate progress in the study of (1) the nerve regulation of respiration, blood circulation, and metabolism; (2) nerve mechanisms compensating disturbed organic functions; and (3) problems of physical training and physical and resort therapy. Nesterov further stated that work in the fields of functional biochemistry and the creation of biological models of diseases is lagging. He then referred to the gap between academic work on Pavlovian physiology and clinical application of the results of that work, ascribing the existence of this gap to inadequate attention given by academic institutions to demands of clinical medicine. On mentioning the newly founded Institute of Pharmacology of the Academy of Medical Sciences USSR, Nesterov deplored that an institute of psychoneurology has not yet been created.

He also outlined in a latter part of the report the advantages of having the newly-organized Institute of Antibiotics within the framework of the academy. Among positive achievements Nesterov mentioned the following: progress in the treatment of infectious children's diseases; advances in surgery and improved techniques in this field involving blood transfusions (although scientific equipment and personnel at surgical establishments are not quite adequate); important contributions to oncology made by A.D. Timofeyevskiy and L.A. Zil'ber (clinical work on the prophylaxis of cancer with a specific vaccine has been started); progress in Soviet microbiology, virology, and immunology, raising the status of these disciplines high above the levels reached abroad; and significant progress in parasitology, particularly in connection with the study of natural reservoirs of diseases.

In the balance of his report, Nesterov first subjected to criticism the Institute of Pediatrics (because it is not yet the leading center which it should be); the Institute of Nutrition (for an inadequate level of research on the role of higher nervous activity in processes of metabolism and aging as affected by nutrition, and for failure to determine vitamin requirements for various types of labor); the Institute of General and Communal Hygiene (for inadequate coordination with other institutes; insufficient attention to problems of rural water supply; insufficient planning and improvement of kolkhozes and motor tractor stations; insufficient attention to hygiene of clothing and footwear, personal hygiene, and prevention of noise in streets and dwellings); and the Institute of Public Health Organization and History of Medicine (for inadequate contacts with therapeutic-prophylactic institutions and insufficient aid to public health organizations although there has been some improvement). He then stated that the preparation and publication of monographs dealing with the institutes' work on Pavlov's theories proceeds too slowly; that members of the Academy and scientific associates of the academy do not expose foreign critics of Pavlov's theory frequently enough, and do not criticize some errors committed by Soviet physiologists; and that one of the main deterrents to the development of Pavlov's teaching is the excessive dogmatism of some of its proponents, which gives rise to monopolistic tendencies in this field of science.

He furthermore said that some of the doubtful aspects of the works of K.M. Bykov and A.G. Ivanov-Smolenskiy have not been subjected to the criticism which they deserve. It was Bykov who advanced the concept of the unity of the external and internal environments, and Ivanov-Smolenskiy who propounded new ideas on the interrelationship between the second and the first signal systems and on therapeutic sleep. According to Nesterov, the reason for this lack of criticism is due in part to the fact that Bykov and Ivanov-Smolenskiy, since the joint session [with the Academy of Sciences USSR], have failed to observe the Pavlovian principles of collectivism, and in part to the failure of the collectives within which Bykov and Ivanov-Smolenskiy work to help them by advancing friendly criticism. Nesterov remarked that everybody appreciates the fact that Bykov and Ivanov-Smolenskiy have contributed much of value to Soviet medicine, and hopes that they will contribute still more in the course of friendly collaboration.

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In the last section of his report, Nesterov said that criticism should be constructive rather than personal, i.e., of a type aiming at the elimination of the opponent. He concluded by pointing out defects in the personnel management of the academy institutes, particularly from the standpoint of ideological training. He mentioned that notwithstanding the improvement in the selection of scientific personnel, inadequately qualified people had been occasionally appointed during the preceding 3-4 years. He referred in this connection especially to G.M. Bosh'yan, who during a number of years had been in charge of a laboratory at the Institute of Epidemiology and Microbiology imeni N.F. Gamaleya. In regard to Bosh'yan, Nesterov stated that a qualified commission charged with investigating the activity of Bosh'yan's laboratory found that the work done by Bosh'yan and his collaborators was of absolutely no value to science.

Nesterov's report was followed by a discussion. In the course of this discussion Prof. D. A. Biryukov emphasized that I. P. Pavlov's approach to the study of the organism as a whole involved many-sided investigation of the functions of individual organs, while at present exclusive attention is being paid to investigation of the higher nervous activity. Biryukov also objected to the tendency of making Ivanov-Smolenskiy's method of the investigation of the central nervous system universal, and pointed out that excessive dogmatism prevents the creative application of Pavlov's theories. Prof. O. P. Molchanova discussed the activities of the Institute of Nutrition, referring to the lack of qualified specialists in this field.

Prof. V. N. Orekhovich, after discussing the problem of popularization of medical achievements and criticizing the manner in which medical work is presented in fiction and plays, subjected to criticism the work of the Presidium of the Academy of Medical Sciences USSR, stating that more independence should be given to the heads of the institutes. Prof. M.M. Blokhin, Director of the Institute of Experimental Pathology and Therapy of Cancer, Academy of Sciences USSR, voiced a complaint that too much support is given to alleged pioneers in medical research who make exaggerated claims. Prof. A.F. Tur said that although the joint session [with the Academy of Sciences USSR] on Pavlov's teaching has indicated the course which should be followed by physiologists, clinicians, and, incidentally, pediatricians, all of whom are being criticized at present, an authoritative manual of physiology which conforms to the decision of this joint session is lacking. Tur added that at present there is disagreement on the most important problems of Pavlovian physiology, and that an objectionable polemic, in the course of which the actual subject matter was disregarded, had developed between A.G. Ivanov-Smolenskiy and S.I. Abramyan.

Prof. V.M. Zhdanov reproached the Academy of Medical Sciences USSR and its presidium for neglecting the development of epidemiology, microbiology, and virology. He stated that there are no effective methods for the prophylaxis of dysentery. The academy tolerates time wasted by the Epidemiological Division of the Institute of Epidemiology and Microbiology imeni N.F. Gamaleya on ineffective parenteral vaccines, while at the same time it impedes the development of a dispensary method of prophylaxis. He also stated that no effective vaccines have been developed for measles, scarlet fever, or whooping cough, although it is well known that the best method for the prophylaxis of these diseases is active immunization. He further stated that one of the reasons for the inability of epidemiology and microbiology to meet practical demands is the slow development of a satisfactory general theory of epidemiology. Zhdanov added that during recent years the presidium of the academy concentrated on solving problems of Pavlovian physiology, a field of activity in which much remains to be done notwithstanding the efforts expended on it, particularly in view of the fact that the debates on problems in this field are personal rather than objective and furthermore are permeated with scholastic dogmatism.

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Prof I.K. Zyuzin said that the Academy of Medical Sciences USSR and its presidium do not foster criticism to an adequate extent and in this way maintain monopolies enjoyed by individual scientists, for instance K.M. Bykov, who is protected from criticism. Dr Med Sci M. G. Durmish'yan criticized the writings of Ivanov-Smolenskiy and also spoke against monopolism in science. Academician Ye. N. Pavlovskiy stated that the Presidium of the Academy of Medical Sciences USSR does not pay enough attention to parasitology. In regard to the decision of the Presidium of the Academy of Medical Sciences USSR to create a large center for morphological investigations, Prof B.A. Dolgo-Saburov suggested that it would be a better idea to resume work in this field at the Morphological Sector of the Institute of Experimental Medicine, although the presidium for some reason encourages work on physiological problems only at this institute.

Prof M.S. Maslov objected to the fact that the presidium reports annually on work done at the Academy institutes, but fails to report work done by individual active members and corresponding members who are active outside the academy institutions. Prof I.M. Nevskiy made "rude and ill-founded statements directed against prominent Soviet scientists." Prof L. A. Zhdanov pointed out the importance of morphological investigations and stated that more precise techniques for carrying out investigations in the field of morphology are essential.

Prof P.P. Bondarenko objected to the speech made by I.M. Nevskiy, and said that one cannot condemn the whole activity of a scientist on the basis of individual errors, as has been done by M.G. Durmish'yan. He further said that controversies between different groups of scientists stultify scientific thinking, and pointed out that K.M. Bykov and A.G. Ivanov-Smolenskiy did not take advantage of all opportunities to propagandize Pavlov's teaching. Prof N.I. Grashchenkov criticized the organizational activity of the presidium, saying that some necessary institutes have not been created, and suggesting that it would be of advantage to transfer the Institute of the Higher Nervous Activity of Humans from the Academy of Sciences USSR to the Academy of Medical Sciences USSR.

Prof S.R. Mardashev said that the Presidium of the Academy of Medical Science USSR and the Ministry of Public Health USSR have not been able to organize cooperation between scientists, and that the Academy of Medical Sciences USSR has condoned suppression of criticism, with the result that people like Bosh'yan thrive at a great expense to the state. Academician A.D. Speranskiy stated that criticism must advance positive suggestions rather than consist of mere attacks on some type of work. Prof L.A. Zil'ber discussed the reasons which prevent the solution of important scientific problems connected with the prophylaxis and therapy of measles, poliomyelitis, cancer, and other diseases. In the course of this discussion, Zil'ber subjected to criticism the organization of scientific investigations in the field of oncology. He stated that the presidium does not always pay due attention to the opinion of competent scientists. He expressed regret that a laboratory for work on the mass culture of tissues, the creation of which was decided upon at a special conference held by the Medico-Biological Department in 1952, has not been organized as yet within the academy.

After expressing his objections to the attitude of Zyuzin and Nevskiy, Prof V.N. Chernigovskiy said that actual criticism probably would be received with gratitude by K.M. Bykov and his collaborators. Prof A.G. Ivanov-Smolenskiy told about investigations in the field of higher nervous activity which are being conducted at the institutes of the academy. Although many of these investigations are successful, he said, laws pertaining to the functioning of the large cerebral hemispheres, to ontogenesis and types of higher nervous activity, and to cortical inhibition are not being carried out to a sufficient extent at the institutes of

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physiology and of experimental medicine. Least of all has been done on the investigation of the higher nervous activity of adults, he added. He then subjected to criticism the presidium, of which he is a member, for weaknesses in organizational work, and expressed the opinion that work in the field of corticovisceral pathology represents "a deviation from the main road of Pavlovian physiology." Ivanov-Smolenskiy also defended himself against criticism directed at him during the session and in various publications.

In the next address K.M. Bykov emphasized that prophylactic medicine may succeed only by following the path indicated by I.P. Pavlov. He thanked the participants of the session for criticizing him and stated that the Scientific Council on Pavlov's Physiological Teaching, of which he is the head, and the Presidium of the Academy of Medical Sciences USSR, have not yet been able to eliminate many of the shortcomings pointed out during the session.

In the address of 10 December 1953 with which he concluded the general discussion, A.I. Nesterov expressed satisfaction that much constructive criticism had been advanced. He stated that, although it will be of advantage to heed factual criticism, any attempts to revise under the guise of criticism the decisions of the Scientific Session of Pavlov's Teaching [of the joint session with the Academy of Science USSR] must be decisively rejected.

On 10 December 1953, the session was greeted by Dr L. Steidle, Minister of Public Health, German Democratic Republic, and Dr B. Kozusznik, Deputy Minister of Public Health, Polish People's Republic.

A report entitled "The Prophylactic Direction in Medicine, and Problems of Physiology and Pathophysiology" was presented by V.N. Chernigovskiy. In this report, Chernigovskiy discussed the pathogenesis and therapy of diseases from the standpoint of the unity between the organism and its environment, of cortico-visceral relationships, and of the neurogenic theory of the origin of diseases. He pointed out the importance of the method of experimental prophylaxis, i.e., one involving investigations of the prophylaxis of diseases and also of their therapy on experimental animal models in which a condition duplicating the human disease has been artificially created. He also stated that the dependence of individual characteristics of pathogenesis on the type of the higher nervous activity has been convincingly demonstrated by I.I. Speranskiy's work on the therapy of hypertension.

In the discussion of V.N. Chernigovskiy's report, I.V. Davydovskiy said that the distinction between etiology (external factors) and pathogenesis (internal factors) has been crused. He also stated that the prophylaxis of many diseases is imperfect, although the causative factors of the diseases are known, and explained this by saying that prophylaxis is directed against the microorganisms, while one must also consider the human being and his environment.

In the course of a symposium on the prophylactic aspects of internal medicine, A.L. Myasnikov stated that the differences in the approach used by hygienists and clinicians must be eliminated, so that the essential unity in the causes of diseases will not be overlooked. He also said that investigation of differences in the type of nervous system of patients must not be underestimated, because typological characteristics of the nervous system contribute to the development of diseases such as bronchial asthma, hypertension, gastrointestinal ulcers, etc. He added that prevention of neurotic conditions plays an important role in the prophylaxis of internal diseases. Prof. A. I. Serebrov discussed the value of prophylactic examinations and treatment for the prevention of cancer. He also stated that the opinion held by some oncologists that cancerogenic substances have no effect as far as initiation of cancer is concerned has had a harmful influence on the progress of oncology.

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Prof. A. I. Savitskiy also spoke on the prophylaxis of cancer. He said that according to the data of the State Institute of Oncology Leon Gertsen, million persons in the RSFSR during the past 4 years. Prof. I. H. Mayskiy reported on some results in the field of oncology obtained at the Institute of Experimental Biology. Prof. N. A. Shmelev told about the prophylaxis of tuberculosis in the USSR as it is guided by the Institute of Tuberculosis, Academy of Medical Sciences USSR. He said that work is being conducted along three directions: (1) development of new vaccines which have stronger immunizing properties and a more lasting action than BCG (Bacillus Calmette-Guerin), so that the repeated immunizations necessary with BCG will be avoided; (2) early treatment which would prevent development of the infection process; and (3) prevention of chronic tuberculosis and treatment of [apparently cured] tuberculosis which reappears. In conclusion, Prof. Shmelev stated that the main reliance in combating tuberculosis is placed on the dispensary method, and that this reliance has proved justified.

A discussion on the status and problems of the hygienic sciences in connection with the development of prophylactic medicine was launched by a report of A. N. Sysin. In this report, Sysin emphasized the principles of Soviet and Pavlovian medicine and physiology, discussing the unity between the organism and its environment. He stated that the environment should be investigated from three viewpoints: the physiological, pathophysiological, and sanitary-statistical. He also said that the method of conditioned reflexes is being used extensively in investigations in the field of hygiene.

In the general discussion which followed Sysin's report, most hygienists who participated were satisfied with the definition of the role and tasks of hygiene as given by earlier speakers at the session. Some of the hygienists expressed astonishment, however, at V. H. Chernigovskiy's suggestion that hygienists regard their own activity as entirely dependent on results obtained by physiologists. Prof. A. A. Letavet emphasized the necessity of ensuring cooperation from representatives of all branches of medical sciences, including physiologists, hygienists, and clinicians, in order to carry on efficient prophylactic measures. He gave as an example of such cooperation investigations on the etiological factors of diseases of the peripheral nervous system which were carried out by the Institute of Labor Hygiene and Professional Diseases in collaboration with the Institute of Neurology. According to Letavet, the efforts of hygienists, physiologists, chemists, and engineers were combined in this work, as a result of which, measures for the improvement of hygienic conditions were proposed.

Prof G. A. Batkis discussed an important form of prophylaxis, the treatment of the population in dispensaries. He stated that the system of dispensary treatment suffers, since clinicians, physiologists, general therapeutists, and scientific research institutes are reluctant to participate in it.

In the subdivision of the session dealing with the status and problems of scientific research as they affect the prophylaxis of infectious diseases, the principal report was given by V. D. Timakov. Timakov stated that the USSR is the foremost country in the world as far as the scope and level of research on the prophylaxis of infectious diseases are concerned, and that Soviet scientists have developed an original general system for the prophylaxis of infectious diseases as well as specific systems for the prophylaxis of plague, cholera, smallpox, typhus, brucellosis, and other diseases. He further stated that important original work has been carried out in the USSR on natural foci of infectious diseases. He pointed out that research on the modification of microorganisms is of great importance for the prophylaxis of infectious diseases, and said that vaccine strains for the prevention of smallpox, plague, tularemia, brucellosis, influenza, and other diseases have been obtained on the basis of work done in this field. He also stated that research on the development and multiplication of microorganisms resulted in new methods of culturing, which led to radical improvements in the production of bacterial preparations.

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In connection with problems of immunoprophylaxis and immunotherapy, Timakov mentioned the progress achieved by the application of Pavlov's theories. He stated that at present one can no longer entertain any doubt that summation of specific irritations and reflectory mechanisms is of importance in the pathogenesis of bacterial infections and in immunogenesis. It has also been proven, Timakov added, that the processes involved in the development of pathogenesis and immunogenesis are regulated by the central nervous system. Timakov went on to say that productive research is being done on problems of specific immunoprophylaxis and of the therapy of infectious diseases, with the result that new bacterial, prophylactic, and therapeutic preparations have been developed. He added that USSR researchers investigated within a short time the ecology and epidemiology of seasonal encephalites, hemorrhagic fevers, and a number of rickettsioses, and on the basis of the information obtained developed a system of prophylactic measures for these diseases.

A considerable part of Timakov's report was devoted to a discussion of shortcomings in research on the prophylaxis of infectious diseases. He mentioned particularly that modification of microorganisms is studied in the laboratory, but not under natural conditions; that the prophylaxis and therapy of whooping cough, scarlet fever, and measles is not being studied to an adequate extent; and also that problems pertaining to the physiology of viruses and to the prophylaxis of virus diseases are not being investigated adequately.

Prof. A.A. Smorodintsev did not agree with some of the statements made by V.D. Timakov. Specifically, he criticized Timakov's assertions in regard to the conditioned reflex mechanism of the formation of antibodies and the use for the preparation of live vaccines of microorganisms obtained by directed modification. In regard to the prophylaxis of influenza, Smorodintsev remarked that application of live anti-influenza vaccine and of serum prophylaxis on the basis of methods developed by USSR scientists reduces the incidence of influenza by a factor of two at least. Notwithstanding this achievement, Smorodintsev added, the academy does not support work on the prophylaxis of influenza to a sufficient extent, and the work of virological laboratories in general is lagging.

Prof. P. G. Sergiyev discussed the problem of complete elimination of malaria in the USSR. He also said that at present one of the most important problems is development of an effective vaccine against measles. In order to develop this vaccine, he stated, it is necessary to supply the laboratories with animals which are susceptible to measles, i.e., monkeys. Prof. V.L. Troitskiy recommended wider use of isotopes and tracer atoms in scientific research. After emphasizing the importance of prophylactic inoculations against dysentery, he proposed that work on this subject be conducted on a wider scale at the Sukhumi Medico-Biological Station.

Prof. I.I. Rogozin subjected to criticism individual propositions of V.D. Timakov's report pertaining to research on the directed modification of microorganisms. He said that the author of the report is wrong in asserting that sufficient data are not available for the application of Pavlov's physiology to the investigation of immunological problems: extensive data on this subject have been accumulated at various USSR institutes [Rogozin's remarks are not understandable in the light of the published account on Timakov's report; they possibly refer to Smorodintsev's rather than Timakov's report.]

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Prof Sh. D. Moshkovskiy discussed organizational problems connected with the activity of the new academy institutes: the Institute of Pharmacology, Chemotherapy, and Chemoprophylaxis and the Institute of Antibiotics. He said that the basic program of work at the new institutes must be planned under participation of specialists from all fields, irrespective of the academy departments to which they belong. He also remarked that lack of attention to problems of the epidemiology of dysentery interferes with the solution of these problems. Prof L.V. Gromashovskiy also criticized the presidium for lack of attention to those problems and stated that the work of the Kiev Institute of Infectious Diseases became more one-sided after this institute had been included in the Department of Clinical Medicine of the Academy of Medical Sciences USSR. He further said that epidemiologists are not represented either at this institute or at the Institute of Virology, and that instruction in epidemiology at higher educational institutions, suffers from many defects.

Prof V.I. Ioffe discussed shortcomings in the study of the nerve regulation of immunological processes. He also said that the academy does not pay sufficient attention to investigations on the etiology and therapy of scarlet fever, and further discussed the prophylaxis of rheumatism, angina, and whooping cough. In regard to rheumatism Ioffe said that clinicists for some reason do not participate in research on this disease. As far as scarlet fever and whooping cough are concerned, he suggested that work on methods of inoculation against these diseases be continued. He added that the initial results of work on inoculation against scarlet fever were encouraging.

Ye. N. Levkovich told about investigations done by USSR scientists in the field of physiology of viruses, the directed modification of viruses, and the role of the nervous system in virus diseases. He said that use of physiological data had led to the development of a number of methods for the vaccinoprophylaxis of virus diseases. Prof B.S. Preobrazhenskii stated that the prophylaxis of any disease requires the cooperation of physicians active in different fields of specialization. He mentioned as an example the prophylaxis of grippe [influenza and/or respiratory catarrhs], a disease which occurs in three different forms, each of which requires entirely different methods of prophylaxis.

The meeting of 10 December 1953 was closed with an address given by N.N. Zhukov-Verezhnikov, Deputy Minister of Public Health, USSR. Zhukov-Verezhnikov said that the Eighth Session of the Academy of Medical Sciences USSR is of great importance, because it disclosed many serious defects in the work of the academy. One of these defects, Zhukov-Verezhnikov stated, is the fact that institutions which are not directly concerned with problems of hygiene do not participate in work on the scientific aspects of prophylaxis. According to Zhukov-Verezhnikov, the Ministry of Public Health USSR considers it essential that work of this type be conducted not only at hygienic and antiepidemic institutions, but also at institutes and laboratories which carry on investigations in physiology, biochemistry, pharmacology, and medical biology and, in addition, at clinics for internal, pediatric, surgical, and obstetric-gynecological diseases.

As far as the practical needs of public health work are concerned, Zhukov-Verezhnikov pointed out the necessity of solving a number of problems as a basis for prophylactic measures. In order that these problems be solved, he said, it has been proposed that the subdivision of experimental prophylaxis be included in the state plan of scientific medical investigations. Work in this subdivision, Zhukov-Verezhnikov stated, will expedite investigation of

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the etiology and pathogenesis of diseases. In conclusion, Zhukov-Verezhnikov remarked that the occasionally severe criticism, advanced during the Eighth Session of the Academy of Medical Sciences USSR and directed against certain shortcomings in the work of the Ministry of Public Health USSR and the Presidium of the Academy of Medical Sciences USSR, will reinforce the principle of collective work and will have a beneficial effect on the progress of medical science and public health.

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